

REMARKS

This amendment is submitted in reply to the outstanding Office Action dated February 19, 2008. Claims 61, 101-108 and 147-149 currently stand rejected. Claims 64-100, 109-113, 116, 119, 120 and 122-138 are withdrawn. Applicants have canceled 122-138, without prejudice. The remaining claims remain unchanged. Applicants respectfully traverse the current rejections.

In light of the remarks presented below, Applicants respectfully request reconsideration and allowance of all now-pending claims of the present invention.

Claim Rejections - 35 USC §112

Claims 61, 101-108 and 147-149 currently stand rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the enablement requirement. Specifically, the Office Action asserts that the specification only provides support for a data signal being spread and then proceeding to a modulator and therefore fails to enable the modulator using the data signal before spreading as understood from independent claim 61.

However, page 50, lines 15-20 of the specification clearly state that the data signal may be modulated and then subsequently spread. Accordingly, contrary to the assertion in the Office Action, the specification provides direct support for the performance of modulation prior to spreading as provided in independent claim 61. As such, the rejection of independent claim 61 under 35 U.S.C. §112, first paragraph, is respectfully traversed. Claims 101-108, 147 and 148, which appear to be rejected under 35 U.S.C. §112, first paragraph, only as being dependent from a rejected base claim, are therefore also enabled under 35 U.S.C. §112, first paragraph, and the rejections of claims 101-108, 147 and 148 under 35 U.S.C. §112, first paragraph, are also traversed.

Claim 149 is separately rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement for claiming that the carrier is a sinusoid. The Office Action asserts that the carrier is described in FIG. 15B, but does not show a sinusoid. However, FIG. 15B shows a sinusoidal carrier after it has been modulated by the data signal of

FIG. 15A. In this regard, page 26 of the specification states that whenever the logic signal $l(t)$ undergoes a change of state, a phase shift of 180 degrees is introduced into the carrier signal. FIG. 15A shows the logic signal $l(t)$ and FIG. 15B shows the modulated signal $G(t)$, which is output from the modulator (as shown in FIG. 14). As shown in FIG. 15B, each time the signal $l(t)$ changes from a one to a zero or vice versa, the phase of the sinusoidal carrier generated by the oscillator 171 reverses by 180 degrees. Thus, one of skill in the art would clearly appreciate from FIGS. 15A and 15B that the carrier is a sinusoid. Accordingly, Applicants respectfully submit that the rejection of claim 149 is also traversed.

Claim Rejections - 35 USC §103

Claims 61, 101-108 and 147-149 currently stand rejected under 35 U.S.C. §103(a) as being unpatentable over Nuytkens (U.S. Patent No. 6,765,950) in view of Lee et al. (U.S. Patent No. 5,937,000, hereinafter "Lee").

Independent claim 61 recites, *inter alia*, a modulator operable to modulate at least one separate periodic signal carrier. The Office Action asserts that element 94 (the LPC synthesis filter) of FIGS. 5a and 5b of Lee corresponds to the claimed modulator of independent claim 61. Applicants respectfully submit that there is no correlation between the LPC synthesis filter 94 of Lee and the modulator of the claimed invention. In this regard, the spread data signal $p(n)$ output from the mixer 90 in Lee is simply passed through a digital filter which shapes the spectrum of this spread data signal. The filter transfer function ($1/A(z)$) is given in column 11 of Lee (which is the standard LPC synthesis filter function) and therefore the output of this filter ($p_c(n)$) will be given by the following equation:

$$p_c(n) = p(n) + a_1 p_c(n-1) + a_2 p_c(n-2) + \dots + a_N p_c(n-N)$$

where a_i ($i = 1$ to N) are the LPC co-efficients determined by the LPC analysis unit 88. The LPC co-efficients are scalar values and in no way can be equated to the claimed separate periodic carrier signal. In fact, the LPC synthesis filter 94 of Lee simply does not involve any modulation of any separate periodic carrier signal with the data signal (before or after it is spread), as provided by independent claim 61. Thus, the disclosure of Lee regarding the LPC

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synthesis filter 94 fails to teach or suggest the modulator of the claimed invention, which is operable to modulate at least one separate periodic signal carrier.

Nuytkens also fails to teach or suggest the modulator of independent claim 61 and is not cited as such. Since both Nuytkens and Lee fail to teach or suggest the modulator of independent claim 61, any combination of Nuytkens and Lee also fails to teach or suggest the modulator of independent claim 61. Thus, independent claim 61 is patentable over Nuytkens and Lee, alone or in combination.

Claims 101-108 and 147-149 depend either directly or indirectly from independent claim 61, and thus include all the recitations of independent claim 61. Therefore, dependent claims 101-108 and 147-149 are patentable for at least the same reasons as given above for independent claim 61.

Accordingly, Applicants respectfully submit that the rejections of claims 61, 101-108 and 147-149 under 35 U.S.C. §103(a) are traversed.

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CONCLUSION

In view of the remarks submitted above, it is respectfully submitted that the present claims are in condition for immediate allowance. It is therefore respectfully requested that a Notice of Allowance be issued. The Examiner is encouraged to contact Applicants' undersigned attorney to resolve any remaining issues in order to expedite examination of the present invention.

It is not believed that extensions of time or fees for net addition of claims are required, beyond those that may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 CFR § 1.136(a), and any fee required therefore (including fees for net addition of claims) is hereby authorized to be charged to Deposit Account No. 16-0605.

Respectfully submitted,



Chad L. Thorson
Registration No. 55,675

Customer No. 00826
ALSTON & BIRD LLP
Bank of America Plaza
101 South Tryon Street, Suite 4000
Charlotte, NC 28280-4000
Tel Charlotte Office (704) 444-1000
Fax Charlotte Office (704) 444-1111

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